

CLAIMS

1. (Currently Amended) A text-entry system based on trigger sequences comprising:

1) a plurality of keys,

2) a plurality of printable symbols, said plurality of printable symbols comprising a set of pre-conversion symbols, a set of post-conversion symbols and a set of non-conversion symbols,

such that at least one of said plurality of keys is assigned more than one of pre-conversion symbols, and

such that at least one fixed sequence of keystrokes corresponds to more than one sequence of said pre-conversion symbols, and

each of said post-conversion symbols being set in a correspondence to at least one pre-conversion symbol,

wherein said set of pre-conversion symbols is disjoint from said set of post-conversion symbols such that no sequence of pre-conversion symbols is equal to any sequence of post-conversion symbols;

3) a plurality of non-printable symbol-input-end symbols, each of which can be generated by a keystroke on ~~at least~~ any one of said plurality of keys, including at least one key of said plurality of keys also having at least one printable symbol said pre-conversion symbol or said non-conversion symbol assigned to it, wherein each said symbol-input-end symbol is a non-printable symbol wherein said input symbol-end symbol generated by said at least one key is always generated if one of said at least one said pre-conversion symbols or said non-conversion symbols assigned to said at least one key is displayed in response to a same keystroke which generates said symbol-input-end symbol;

4) a display to display said plurality of printable symbols,

Response to Final Office Action: May 14, 2010

5) a first mechanism to display said plurality of printable symbols in response to keystrokes,
and

6) a second mechanism to recognize, upon generation of a symbol-input-end symbol of said plurality of said symbol-input-end symbols, ~~inputted elements of a set of trigger sequences of~~ keystrokes triggered sequences of keystrokes of a set of trigger sequences of keystrokes and thereby trigger conversion of ~~at least one m~~ pre-conversion symbol displayed on said display to ~~at least one~~ n post-conversion symbols,

wherein m and n are integers, $m \geq 1$, $n \geq 1$, and $m \geq n$;

wherein each trigger sequence of keystrokes ~~of said set of trigger sequences of keystrokes~~
has two parts:

a) a first part of each said trigger sequence of keystrokes that corresponds to
said ~~at least one n~~ post-conversion symbol symbols; and

b) a second part ~~of each said trigger sequence of keystrokes~~ including said
keystroke that will convert said sequence of keystrokes into ~~a at least one said~~ post-
conversion ~~symbol~~ symbols and at a same time display said ~~at least one n~~ post-
conversion ~~symbol-symbols~~ and a pre-conversion symbol corresponding to said
keystroke,

wherein said keystroke that will convert said trigger sequence of keystrokes
into said at least one post-conversion symbols and at said same time display said at
least one post-conversion symbol also displays a pre-conversion symbol
corresponding to said keystroke,

wherein said pre-conversion symbol, corresponding to said keystroke ~~that~~
~~will convert said trigger sequences of keystrokes into said at least one post-~~

Response to Final Office Action: May 14, 2010

~~conversion symbol and at said same time display said at least one post-conversion~~
~~symbol, wherein said pre-conversion symbol corresponding to said keystroke~~

is itself not converted at said same time; and.

~~wherein each of said symbol-input-end symbols is generated as a result of any keystroke any~~
~~on any key of said plurality of keys which is assigned at least one printable symbol of said plurality~~
~~of keys that follows a previously displayed printable symbol.~~

2. (Withdrawn) The text-entry system of claim 1 further characterized in that:

1) said pre-conversion symbols comprise tone marks and symbols selected from a set of

Latin symbols and

Bopomofo symbols,

2) said post-conversion symbols comprise Hanzi, and

3) elements of a first class of said trigger sequences are characterized in that:

a first subsequence keystroke of said trigger sequences causes said first mechanism to
display one of said tone marks and

one of a subsequent subsequence keystrokes generates one of said symbol-input-end
symbols, said generated said symbol-input-end symbol applying to said displayed said tone mark
causing it to be input.

3. (Previously Presented) The text-entry system of claim 1 further characterized in that:

1) said pre-conversion symbols comprise cHiragana,

2) said post-conversion symbols comprise Kanji, and

3) said non-conversion symbols comprise Hiragana.

4. (Withdrawn) The text-entry system of claim 1 further characterized in that:

- 1) said pre-conversion symbols comprise cLatin symbols,
- 2) said post-conversion symbols comprise of Kanji,
- 3) said non-conversion symbols are selected from a set consisting of:

Latin symbols and

Hiragana, and

- 4) said classes comprising a first class and a second class,

elements of said second class characterized in that they contain:

a first keystroke on any key of said plurality of keys which is assigned at least one of any printable symbol which causes said first mechanism to display a first cLatin symbol of said cLatin symbols,

and a second keystroke on any key of said plurality of keys which is assigned at least one of any printable symbol which generates a first symbol-input-end symbol, said first symbol-input-end-symbol applying to said first said cLatin symbol causing it to be input, where said second keystroke is on key of said plurality of keys, said key characterized in that it has not been assigned any of said cLatin symbols,

and elements of said first class are characterized in that:

said first subsequence that includes said keystroke of said plurality of keystrokes causes said first mechanism to display a first subsequence including said cLatin symbol, and

a first subsequent subsequence that includes said keystroke of said plurality of keystrokes that generates a first subsequence symbol-input-end symbol,

said first subsequence symbol-input-end-symbol applying to said first subsequence including said cLatin symbol causing said cLatin symbol to be input,

where said first subsequent subsequence that includes said keystroke also causes:

a) one of said non-conversion symbols to be displayed by said first mechanism and

b) a second subsequent subsequence that includes said keystroke which generates a second said symbol-input-end symbol, which applies to said displayed non-conversion symbol, causing it to be input.

5. (Withdrawn) The text-entry system of claim 1 further characterized in that:

1) said pre-conversion symbols comprise Latin symbols,
2) said post-conversion symbols comprise Kanji,
3) said non-conversion symbols comprise Hiragana, and
4) said trigger sequences comprise a first class and a second class, elements of said second class characterized as:

containing a first keystroke of said sequence of keystrokes which causes said first mechanism to display a first Latin symbol, and

containing a second said keystroke which generates a first symbol-input-end symbol, said first symbol-input-end-symbol applying to said first Latin symbol causing said Latin symbol to be input,

wherein said second keystroke is on a Latin-symbol-free key, said Latin-symbol-free said key characterized in that it has not been assigned any of said Latin symbols, and

elements of said first class are characterized in that:

said first subsequence that includes said keystroke causes said first mechanism to display:

a) a first subsequence Latin symbol, and

b) a first subsequent subsequence keystroke which generates a first subsequence said symbol-input-end symbol,

said first subsequence symbol-input-end-symbol applying to said displayed first subsequence said Latin symbol, causing said Latin symbol to be input,

where said first subsequent subsequence keystroke also causes a first non-conversion symbol to be displayed by said first mechanism, and

c) a second subsequent subsequence keystroke which generates a second subsequence symbol-input-end symbol, said second subsequence, symbol-input-end symbol applying to said first said non-conversion symbol, causing it to be input.

6. (Withdrawn) The text-entry system of claim 1 further characterized in that:

1) said pre-conversion symbols comprise cJamo symbols,

2) said post-conversion symbols comprise Hanja,

3) said non-conversion symbols comprise Jamo, and

4) said classes comprise a first class and a second class,

elements of said second class characterized in that they contain:

a) a first keystroke which causes said first mechanism to display a first cJamo of said cJamo symbols, and

b) a second keystroke which generates a first said symbol-input-end symbol, said first symbol-input-end-symbol applying to said first cJamo, causing it to be input,

where said second said keystroke is on a cJamo-free key, said cJamo-free key characterized in that it has not been assigned any cJamo, and said trigger sequences in said first class are further characterized in that: said first subsequence keystroke causes said first mechanism to display a first subsequence including said cJamo, and

wherein a keystroke of a first subsequent subsequence generates:

a) a first subsequence symbol-input-end symbol,

said first subsequence symbol-input-end-symbol applying to said first subsequence cJamo, causing it to be input,

wherein said first subsequent subsequence keystroke also causes a first subsequence said non-conversion symbol to be displayed; and

b) a second subsequent subsequence keystroke which generates a second subsequence symbol-input-end symbol, said second subsequence symbol-input-end symbol applying to said first subsequence non-conversion symbol, causing it to be input.

7. (Previously Presented) The text-entry system of claim 1 further comprising a third mechanism to convert a sequence of pre-conversion symbols to a post-conversion symbol upon recognition of said trigger sequence of said set of trigger sequences by said second mechanism.

8. (Previously Presented) The text-entry system of claim 7 further characterized in that said third mechanism is physically remote from said first mechanism.

9. (Previously Presented) The text-entry system of claim 7 further characterized in that said third mechanism performs said conversion based on a context comprising at least one previously-inputted pre-conversion symbol.

10. (Previously Presented) The text-entry system of claim 1 further comprising a predictive text mechanism operating to select said pre-conversion symbols for display based on a context comprising other input symbols.

11. (Previously Presented) The text-entry system of claim 1 further comprising at least one Next key for incrementing symbols in an ordered list containing more than one element, said Next key characterized in that a keystroke on said Next key does not generate a symbol-input-end symbol.

12. (Withdrawn) The text-entry system of claim 1 further comprising a multi-tap mechanism for incrementing symbols in an ordered list containing more than one element, said multi-tap mechanism characterized in that said incrementing symbols in an ordered list does not generate any symbol-input-end symbols.

13. (Withdrawn) The text-entry system of claim 2 further characterized in that each time one of said tone marks is displayed, it is only displayed after a plurality of said Latin symbols have been displayed but not input.

14. (Previously Presented) The text-entry system of claim 1 further comprising:

a first Next key applying to a plurality of said pre-conversion symbols assigned to a key such that a keystroke on said first Next key advances said pre-conversion symbols in an order, and

a second Next key applying to a plurality of non-conversion symbols assigned to a key such that a keystroke on said second Next said key advances said non-conversion symbols in an order,

said first Next key characterized in that a keystroke on said first Next key does not generate a symbol-input-end symbol,

and said second Next key characterized in that a keystroke on said second Next key does not generate a symbol-input-end symbol.

15. (Previously Presented) The text-entry system of claim 3 further characterized in that a plurality of said pre-conversion symbols are assigned to said keys in a substantially Iroha ordering.

16. (Withdrawn) A method for constructing trigger sequences for a text-entry system comprising the steps of 1) selecting a set of printable symbols from a set consisting of pre-conversion symbols, post-conversion symbols, and non-conversion symbols, 2) assigning said pre-conversion symbols to keys such that at least one key is assigned more than one pre-conversion symbol 3) selecting a text-entry mechanism which enters text in response to keystrokes, 4) selecting a set of sample text sequences 4) for each member of said set of selected sample text sequences determining a corresponding keystroke sequence which causes said text-entry system to enter a selected sample text sequence, said corresponding keystroke

characterized in that it does not contain a keystroke on a conversion said key, said conversion key characterized as converting a subset of displayed pre-conversion symbols to a post-conversion symbol, without additionally causing display of further printable symbols where said further printable symbols are selected from the set consisting of pre-conversion symbols and non-conversion symbols, 5) for each said corresponding said keystroke sequence, and for each pre-conversion symbol generated by each corresponding keystroke sequence, finding a subsequence of keystrokes such that said subsequence comprises at least two keystrokes such that a first keystroke of said subsequence of keystrokes causes display of a first pre-conversion symbol, and subsequent keystrokes in said subsequence are characterized in that they generate a symbol-input-end symbol, where said generated symbol-input-end symbol applies to an immediately previously displayed printable symbol to cause input of said immediately previously displayed said printable symbol and where each of said subsequent keystrokes additionally causes display of a further printable symbol, said further printable symbol being either a pre-conversion symbol or a non-conversion symbol, where a last of said subsequent keystrokes of said subsequence completes said trigger sequence, and thereby triggers conversion.

17. (Previously Presented) The text-entry system of claim 1 further comprising an assignment of cHiragana to said plurality of keys in a substantially Iroha ordering.

18. (Previously Presented) The text-entry system of claim 1 further comprising a word-based predictive mechanism.

19. (Previously Presented) The text-entry system of claim 18 further comprising a word-completion mechanism.

20. (Withdrawn) The text-entry system of claim 2 further characterized in that said tone mark appears in said order after any of said Latin symbols in said order.

21. (Withdrawn) A text-entry system based on trigger sequences comprising

- 1) a plurality of keys,
- 2) a plurality of pre-conversion symbols,
- 3) a plurality of post-conversion symbols, each of said post-conversion symbols set in a correspondence to a sequence of said pre-conversion symbols,
- 4) a plurality of symbol-input-end symbols,
- 5) a display to display symbols,
- 6) a first mechanism to display said pre-conversion symbols in response to keystrokes, and
- 7) a second mechanism to recognize trigger sequences and thereby trigger conversion of a pre-conversion sequence comprising at least one said pre-conversion symbol displayed on said display by said first mechanism to a plurality of post-conversion symbols, said trigger sequences comprising a subsequence of said keystrokes, said subsequence comprising at least two of said keystrokes such that

the first of said subsequence said keystrokes causes said first mechanism to display a first said pre-conversion symbol,

the second of said keystroke in said subsequence generates one of said symbol-input-end symbols where said generated symbol-input-end symbol applies to said displayed pre-conversion symbol to cause input of said displayed pre-conversion symbol and

where said second keystroke does not additionally display any of said pre-conversion symbols which follow said one pre-conversion symbol in any sequence of said pre-conversion symbols which corresponds to one of said post-conversion symbols,

whereby following generation one of said symbol-input-end symbols and upon recognition of one of said trigger sequences, conversion of a plurality of said displayed pre-conversion symbols to one of said plurality of said post-conversion symbols is effected without the need for a keystroke on a dedicated convert key and in instances where said second keystroke is on a key having at least one pre-conversion symbol assigned to it, also immediately causing display of a pre-conversion symbol assigned to said key for later possible input and inclusion in a subsequent sequence of pre-conversion symbols.

22. (Withdrawn) A text-entry system based on trigger sequences comprising

1) a plurality of keys,

2) a plurality of printable symbols, said plurality of printable symbols comprising pre-conversion symbols, post-conversion symbols and non-conversion symbols, said post-conversion symbols being distinct from said pre-conversion symbols,

at least one of said keys being assigned more than one of said pre-conversion symbols such that at least one fixed sequence of said keystrokes corresponds to more than one sequence of said pre-conversion symbols,

each of said post-conversion symbols corresponding to a sequence of at least one of said pre-conversion symbols,

3) a display to display printable symbols,

4) a first mechanism to display said printable symbols in response to keystrokes, and

5) a second mechanism to recognize a plurality of trigger sequences of said keystrokes, a first plurality of which trigger sequences triggering conversion of a pre-conversion sequence of at least one of said pre-conversion symbols displayed on said display to at least one said post-conversion symbol upon a keystroke generating a symbol-input-end symbol applicable to a previously displayed pre-conversion symbol of said pre-conversion sequence,

whereby said keystroke generating said symbol-input-end symbol permits recognition of the completion of one of said first plurality of trigger sequences without a further keystroke dedicated to causing conversion of any of said displayed pre-conversion symbols in said pre-conversion sequence to a post-conversion symbol and while also causing display of said pre-conversion symbol corresponding to said keystroke generating said symbol-input-end symbol.

23. (Withdrawn) The text-entry system of claim 22, elements of said first plurality characterized as comprising at least a first and an n th keystroke, $n > 1$, where said first keystroke causes said first mechanism to display a first pre-conversion symbol, and where each following m th keystroke, $1 \leq m \leq n$, generates a said symbol-input-end symbol applying to a $(m-1)$ st pre-conversion symbol causing it to be input, and where each said m th keystroke additionally causes display of a further pre-conversion symbol and where said n th keystroke generates a said symbol-input-end symbol applying to a $(n-1)$ st displayed pre-conversion symbol, and displays an n th said pre-conversion symbol, said n th pre-conversion symbol characterized as displayed and not converted upon said

nth keystroke, said nth keystroke thus being said keystroke permitting recognition of completion of said trigger sequence, so that it is recognized by said second mechanism, permitting conversion before any further keystroke is made.

24. (Withdrawn) The text-entry system of claim 22, wherein each of the trigger sequences comprises a subsequence of at least two keystrokes such that the first of said keystrokes in the subsequence causes the first mechanism to display at least one pre-conversion symbol, and the second keystroke in the subsequence generates at least one symbol-input-end symbol, where the generated symbol-input-end symbol applies to at least one pre-conversion symbol displayed by the first mechanism in response to the first keystroke of the trigger sequence whereby conversion of a plurality of pre-conversion symbols to a plurality of post-conversion symbols is effected without the need for a keystroke on a dedicated convert key.

25. (Withdrawn) A text-entry system based on trigger sequences comprising:

- 1) a plurality of keys,
- 2) a plurality of pre-conversion symbols,
- 3) a plurality of post-conversion symbols,
- 4) a plurality of symbol-input-end symbols,
- 5) a display to display printable ones of said symbols,
- 6) a first mechanism to display said pre-conversion symbols in response to keystrokes, and
- 7) a second mechanism to recognize trigger sequences and thereby trigger conversion of a plurality of pre-conversion symbols displayed by the first mechanism to a plurality of the post-conversion symbols, the trigger sequences comprising a subsequence of keystrokes, the

subsequence comprising at least two of keystrokes such that the first of the keystrokes in the subsequence causes the first mechanism to display at least one pre-conversion symbol, and the second keystroke in the subsequence generates at least one symbol-input-end symbol, where the generated symbol-input-end symbol applies to at least one pre-conversion symbol displayed by the first mechanism in response to the first keystroke of the trigger sequence to immediately cause conversion of a plurality of pre-conversion symbols to a plurality of post-conversion symbols is effected without the need for a keystroke on a dedicated convert key and in instances where said second keystroke is on a key having a pre-conversion symbol assigned to it, also immediately causing display of a pre-conversion symbol assigned to said key for later possible input and inclusion in a subsequent sequence of pre-conversion symbols.

26. (Cancelled)

27. (Cancelled)

28. (Previously Presented) The text-entry of claim 1, wherein said symbol-input-end symbol also inputs said previously-displayed printable symbol for recognition by said second mechanism.

29. (Previously Presented) The text-entry system of claim 1, wherein a further condition for said a symbol-input-end symbol of said plurality of symbol-input-end symbols being generated is only if there is also displayed said previously-displayed printable symbol.

30. (New) The text entry system of Claim 1, further comprising:

a second plurality of said keys which generate symbol-input-end symbols with no simultaneous generation of a said printable symbol, and

wherein said symbol-input-end symbols generated by elements of said second plurality is part of said trigger sequences.

31. (New) The text entry of Claim 1, further comprising:

a convert key to generate said symbol-input-end symbol without a display of a further printable symbol; and

a send key to generate said symbol-input-end symbol without a display of a further printable symbol.